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INDIAN FISCAL FEDERALISM: POLITICAL ECONOMY AND ISSUES FOR REFORM

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Abstract

India is a federal state where the institutions of fiscal federalism have been determined by a complex political, social and economic history, in addition to the guidelines imposed by its constitution and legal institutions. The institutional structure, within which tax, transfer and public spending programs are designed and implemented, can be an important tool for, or major impediment to, economic reform and development. Therefore, understanding how the fiscal federal structure works in India and the constraints given by its political economy are important inputs for analyzing the likely effects of reform. In this paper we begin the development of a model of fiscal federalism in the Indian case that allows for self-interested government decisions, political pressure, and imperfect instruments of control. We show how costly influence activities may depend on the federal fiscal structure in place in India.

Indian Fiscal Federalism: Political Economy and Issues for Reform

Kenneth Kletzer and Nirvikar Singh

1. Introduction

India is a federal state with a larger population than the United States and the European Community combined. Not surprisingly, it is one of the most fiscally decentralized, as measured by the proportion of **government** expenditure **that occurs below** the central level. The assignment of fiscal responsibilities to different levels of government has been determined by the political, social and economic history of **India**, in **addition** to the guidelines imposed by its constitution and legal institutions. The institutional structure, within which tax, transfer and public spending programs **are** designed and implemented, can be an important tool for, or a major impediment to, economic reform and development. Therefore, **understanding how the** fiscal federal structure **works in India and the constraints** given by its political economy are important inputs for analyzing the **likely effects of reform**. Further, the reassignment of **fiscal** responsibility, **respecting** the legal, political and social environment, can be a fruitful area for institutional reform to promote growth and development.

One of the major issues of policy debate in India over the years since independence has been the division-of authority for collecting revenues and of **responsibility** for making public expenditures between the central, state and local governments. **The constitution of India recognized the political need for** decentralization by granting a significant degree of fiscal autonomy in explicit **provisions**. It assigned specific tax instruments and autonomous **responsibility** for certain public spending programs to the states. Political pressures for the decentralization of fiscal authority arise from conflicts over the allocation of **public** resources across regions and social communities and the widespread concern that concentrated political power at the federal level will benefit majority

constituencies. Regional decentralization of taxation and public spending may promote fairness and help protect minority interests in the distribution of public and private resources under majority rule. Even with constitutional mandates and a legal system that protect minority groups, the fiscal policies chosen by a federal government can favor some regions **over** others and, therefore, some social communities over others. A major issue in public policy debate in India is whether or not its system of fiscal federalism guards against a national majority choosing an allocation of public goods and distribution of tax burden that disfavors some regions or communities.

Studies of the economics of fiscal federalism in India have concentrated on problems of allocative efficiency and the system of interjurisdictional transfers **without** modelling how politics and economics interact¹ in the institutional setting of Indian **federalism**¹. The goal of this paper is to initiate such an investigation by developing a political-economy model of decentralized fiscal policy making motivated by the Indian case. The model of this paper proposes a framework for analyzing how political forces influence the provision of public goods by different levels of government and allocation of tax revenues across jurisdictions under different institutional structures. Intergovernmental fiscal relations are discussed using a simple model in which public goods allocation at the federal and the state level is determined by majority voting.

The first application of the model is to show how majority rule in a decentralized fiscal system leads to a division of tax revenues between the federal and state governments and an allocation of public expenditures between national and local (state) public goods. In the example models, a state government is identified with a particular local public goods spending plan which is chosen under majority rule by the median **voter** of the state. A federal

¹There are notable exceptions to this statement. Rao (1981) allows for political variables in his analysis of tax and expenditure determination in four Indian states. Rao and Tulsidhar (1991) relate trends in public expenditure in India to Bardhan's discussion of Indian rent-seeking. Rao and Sen (1993) discuss the role of interest **groups** in public expenditure theory and attempt to relate India's experience to these ideas. None of these papers has a formal theoretical model.

government consists of a level of national public goods provision and set of interjurisdictional transfers which is chosen by a majority of the states -- that is, by the median voter in a simple majority of states. The need for national policy makers to achieve a parliamentary majority leads to the result that a subset of states is favored in the federal allocation of public resources. In this system, discretionary policy making by national fiscal authorities chosen indirectly by a simple majority can thwart social goals of fairness or equity in the distribution of public expenditures and tax burdens across regions or communities.

Several interesting issues arise when authorities representing different jurisdictions can undertake efforts to influence the policies chosen by other levels of government in a federation. The institutions of fiscal federalism establish the extent to which each level of government exercises discretion and, therefore, determine the importance of influence activities in interjurisdictional fiscal relations. When the federal government has some discretion over intergovernmental transfers between itself and the states or across states, state fiscal authorities have incentives to try to influence the allocation of grants to favor their constituents. For example, the federal government might use matching grants to provide incentives to sub-national levels to provide specific public goods or transfers. If the objectives or amounts of matching grants can be chosen by the national government, then the state or local authorities will seek to have the formulae changed to the benefit of their jurisdiction. While the motives can be purely redistributive, these activities distort the allocation of resources so that efficiency and other social welfare objectives are sacrificed.

Institutional design can either exacerbate or reduce the possibilities for rent-seeking and similar unproductive redistributive activities. It is a widely-held belief that opportunities for such activities abound throughout the different levels of government in India. Here, we only raise the possibility that the system of fiscal federalism in India may give rise to undesirable efforts to influence transfers between jurisdictions. The same idea applies to

national government provision of public goods that have a local aspect, that is, the distribution of benefits to different regions can be chosen, and to taxes when the regional distribution of incidence varies with the tax instrument.

In this paper, we explain how influence activities at sub-national levels of government can be incorporated into the political-economy model of decentralized fiscal policies chosen through majority voting. One implication of the simple model is that the stakes for state governments in influencing the distribution of transfers from the federal government and national public goods spending can be very large. Another is that a reduction in the degree of discretion available to the federal government over the allocation of common revenues across states could lead to an improved ability for achieving overall social welfare objectives of distribution and efficiency. Although it inhibits the ability of fiscal authorities to respond to changing circumstances, a fixed well-defined assignment of tax authority, public spending responsibility and interjurisdictional transfers between the federal and regional governments reduces the capacity for counter-productive influence activities between levels of government.

Our paper proposes an approach for modelling the political economy of fiscal federalism for the purpose of informing the discussion of institutional reform when sub-national public authorities engage in unproductive influence activities. At this stage, the model is just a starting point for identifying the importance of reform of the institutional structure in which fiscal assignments are made in a federation and is far from the point of application to real reform in India. However, the essential features of our model are informed by the experience of federalism in India and rely on several observations about the allocation of federal revenues, as well as the assignment of fiscal authority and responsibilities in India.. Before we propose our modelling strategy, we provide a survey of the elements of Indian fiscal federalism that are important for fiscal reform with an emphasis on those that are germane to the assumptions we make in our model.

The remainder of the paper is organized as follows. In section 2, we provide an overview of several major issues and features of Indian fiscal federalism. This section begins with some specific motivation for our analysis: the fiscal issues faced by the Indian government in its current process of overall economic reform. It ends by drawing out **three major** issues around which our subsequent discussion is organized: tax competition among the state governments; tax competition between the center and the states; and the fiscal imbalances between the center and the states. Section 3 discusses the importance of these three issues for the political economy of fiscal federalism. Section 4 proposes the median voter model of multi-jurisdictional fiscal policy making and discusses how it can be used to analyze the political economy of fiscal federalism more precisely. We focus, in particular, on the fiscal gap between the center and the states, and consequent determination of interjurisdictional transfers. This section briefly discusses variants of the basic model of fiscal federalism and the extension to incorporate unproductive rent-seeking between levels of government. Section 5 gives a summary conclusion and discussion of extensions for further research.

2. The Case for Reform of the Federal Fiscal Structure

The Indian government has undertaken an extensive set of reforms since 1991.² These reforms have occurred at a time of government fiscal stringency. They have involved considerable scrutiny of the allocative role of the government in the Indian economy. This has particularly focused attention on the efficiency of government expenditures. India's fiscal federal structures are potentially important influences on this efficiency, and have received increased attention also in the reform period.

While substantial progress seems to have been made in the reforms, one major constraint faced by the government in its liberalization attempts has been

²A summary of the experience of reform and remaining issues is in the report on a conference held at the University of California, Berkeley (Kohli, 1993).

the fiscal deficit, which has increased to the point that some analyses suggest is unsustainable'. Attempts to control the central government deficit, however, have been unsuccessful⁴. The central government deficit threatens to be well in excess of 6 per cent of GDP. Much of this deficit comes from statutory and discretionary transfers to the states from the center; The states rely heavily on these transfers to cover their expenditures.

Therefore, the central government is unable to independently tackle the issue of the fiscal deficit⁵. The state governments must also play a role, but their own burgeoning deficits suggest that they have not done so as yet. State governments point out that they are constitutionally obligated to make the lion's share of social expenditures, and that squeezing them will have dire consequences for the welfare of citizens. Clearly, the issue is one of some urgency, and understanding the political and institutional constraints and possibilities of the fiscal federal structure is vital; While we do not model the fiscal deficits issue, it may be kept in mind as a motivating factor, in addition to the general attention to the government's role in a liberalized economy.

Revenue-sharing between Central and State Governments

We begin with some basic facts on India's federal structure. Excellent recent surveys are in Rao and Chelliah (1990) and Rao (1993), so we do not attempt a comprehensive description. From 1974 to 1986, on average, India's subnational governments accounted for a little over half of total government spending (World Bank, 1988). For 1987, the figure was 54.4 per cent (Rao, 1993). Their revenue, on the other hand was substantially below this fraction. The difference was largely closed by central government revenue sharing and other

³In particular, this is the conclusion of Buiter and Patel (1991).

⁴For example, see the report by Jha (1994), or subsequent coverage of the central government budget in Indian newspapers.

⁵An excellent recent survey of the role of sub-central government finances in the process of cutting the fiscal deficit in India is Rao and Narayana (1994).

government transfers. For 1987, the share of state government revenue in total government revenue was only 30.2 per cent, and the states financed only 43.4 per cent of their expenditure from their own revenues (excluding loans)⁶.

Revenue sharing is, of course, common in federal systems. The rationale for sharing is often based on fiscal capacity: the ability of the central government to raise revenue at lower collection costs and creating smaller excess burdens. What is not necessarily stressed is the dependence of that fiscal capacity on the particular institutional setting of fiscal policy-making. One of the striking comparisons that is highlighted by Rao (1993) is how low the ratio of states' revenue to states' expenditure is for the Indian case, that is, 43.4 per cent. The only comparable figure is 44.6 per cent for Australia, which has a total population about as large as a smaller Indian state. Figures for other larger federations are substantially higher, for example, 88.1 per cent for the United States, and 67.4 per cent for Brazil. These other federations also involve more spending directly by the central government, for example, 69.1 per cent in the U.S. and 67 per cent in Brazil. Thus India stands out because as a large federation it has a high degree of decentralization of expenditure. One might expect this result because of India's size, but not the correspondingly high degree of centralization of revenue collection that occurs. The result is what Rao (1993) calls a "vertical fiscal imbalance". However, there is no *prima facie* reason for this imbalance to be a problem. If it simply reflects differences in fiscal capacity, coupled with information differences that favor decentralization of expenditures, there should be no problem at all. We will suggest below, however, that the political economy of this imbalance is a problem.

Another commonly stated motivation for **central** revenue sharing is the reduction of inequality: a poor region will be able to raise less revenue per capita, and central transfers can play an equalizing role. Again, India stands out in this respect because of the wide range of per capita incomes: the average

⁶These numbers are also from Rao (1993), whose own source is the Government Finance Statistics of the International Monetary Fund.

per capita income in the richest state is probably at least double that of the poorest state'. In India, however, the evidence suggests that the equity objective has not been achieved, even partially, through central government transfers to the states. In fact, some analyses suggest that the overall effect of central transfers has been regressive'.

If this regressivity is indeed the case, why should such an outcome arise? Two possibilities suggest themselves, one involving the political economy of India's fiscal federalism, and the other the particular federal structure. First, and most obviously, the center may be responding to political constraints and incentives that do not match the goals of equity or support their achievement. Secondly, the center, in its elaborate exercises to determine transfers to the states, must, and does, incorporate features that reward resource mobilization efforts by the states'. This incentive goal may easily conflict with the equity objective.

Institutions Governing Transfers

To further understand the vertical fiscal imbalance that we have highlighted so far, along with the issues of efficiency and equity that arise with respect to transfers from the center to the states, we must briefly describe

¹See, for example, the last column of Table 11 in Guhan (1988, which, for the fifteen major states, lists per capita income figures ranging from Rs. 1033 for Bihar to Rs. 3073 for Punjab, averaged over 1979-1984. A similar ratio is reported by Choudhury (1992) who also reports figures for per capita consumption. These latter range from Rs. 1054 for Bihar to Rs. 1864 for Punjab, for 1986-87. Choudhury points out that the income figures overstate inequality because they are based on State Domestic Product, and not personal income.

²A general overview of India's earlier experience in this regard is in Toye (1981), particularly chapter 7, and in Rao (1981). A recent paper that reaches the conclusion of regressivity of transfers is Guhan (1989). A still more recent survey of Indian experience with intergovernment transfers as a poverty reduction instrument, including a discussion of concepts, is Rao and Das-Gupta (1993). Rao (1994) is also a valuable source. The latter two papers make clear that some components of central transfers have been equalizing, while others have had the opposite effect. This point is taken up later in our paper.

³For discussions of this issue of encouraging resource mobilization by the states, see, for example, Bajaj and Viswanathan (1989) and Viswanathan (1990), as well as Guhan (1988, 1989).

some of the particular agencies that partly govern these transfers. These are the Planning Commission, which is permanently constituted as a part of the central government under the control of the Prime Minister, and the Finance Commission, which is periodically constituted as a quasi-independent body, advisory to the government". "The distinction between the responsibilities of the two bodies has been based on "plan" and "non-plan" expenditures, which roughly coincide, respectively, with "developmental" and "non-developmental" expenditures". Thus transfers for different categories of expenditure have been, at least notionally, dichotomously determined, or influenced, by two separate bodies. Of course, this has given rise to problems of coordination of objectives, compounded by the ultimate fungibility of much of the transfers: in practice, both Finance Commission and plan transfers are general purpose¹².

plan transfers to the states have, to a considerable degree, been determined by formulae¹³ based on factors such as state income, urbanization and population, but they have also included expenditures completely earmarked for projects determined by the center; as well as projects which the center encourages by providing matching funds. With a large element of central discretion and control being present, one might argue that the degree of fiscal decentralization suggested by aggregate statistics is overstated. In other

¹⁰More specifically, the Finance Commission is constituted every five years with a charge to make recommendations that cover a period concurrent to the period of a five year plan. Its membership includes academics as well as civil servants and politicians, but the government selects, and therefore to some extent controls, who serves on each commission. Its existence and broad functions are mandated in the Indian constitution. Such a constitutional body seems to be unique to the Indian brand of fiscal federalism.

¹¹By developmental expenditures we mean investment activities, including categories such as education. Nondevelopmental expenditures are essentially for current consumption.

¹²See Rao (1993), p. 18, as well as Rao and Dasgupta (1993) and Rao (1994). The latter states "...the absence of a clear and coordinated approach for distributing unconditional transfers to the states is a major weakness in the Indian federation" (p. 27).

¹³Given the emphasis on planning in India's first four decades after independence, it is not surprising that these formulae have received considerable attention, along with other aspects of the planning process. An example of an analysis of the formulae for plan transfers to states is Ramalingom and Kurup (1991). See also Rao (1994).

words, if state expenditures are to a large extent determined by central instructions, the issue of the vertical fiscal imbalance becomes less important. However, this line of reasoning is controverted by the fact of state fiscal deficits and increases in indebtedness of the states, even allowing for earmarked central transfers. In other words, if the center wishes to control the fiscal deficit, and states are running large deficits, they must be doing something beyond the center's control.

While the Planning Commission concerns itself with directing resources for their potentially best uses for economic growth and development, the Finance commission's responsibility, includes the issue of how those resources are raised through the tax system, as well as purely expenditure-side decisions. For example, it recommends how the proceeds of taxes, such as the national income tax, are to be shared between center and states. Hence, a discussion of the Finance Commission's role and functioning. requires some description of the Indian tax system in a federal perspective.

Central and state responsibilities and rights, with regard to which level of government can levy a particular tax, and how the taxes are shared, are described in the Indian constitution, in particular, Articles 268 to 293 ¹⁴. While the constitution delineated these responsibilities in broad terms, specifics were left to be determined by the Finance Commissions created by the constitution for that purpose. Successive commissions have made recommendations about specific issues of sharing revenues. These recommendations have been made according to their interpretations of the constitution. The result has been a system that allows for considerable administrative discretion, and, in the view of some¹⁵, favors the center at the expense of the states in terms of raising resources through taxation. According to this view, the central government has not adequately used constitutional provisions that do exist for levying taxes exclusively for states' purposes, under Article 269. Finance Commissions have

¹⁴The full text of these articles is reproduced in Thakur (1989).

¹⁵ For example, see Panigrahi (1985).

interpreted other Articles (for example, 270, 271 and 272) as allowing the central government to collect some tax revenues in ways that are exempt from revenue sharing, so that the states' share of taxes is reduced. For example, the center has used a long-lasting income tax surcharge that is not subject to sharing with the states, rather than merging such taxes into the basic income tax structure, whose revenues must be shared between center and states. A similar motivation is alleged with respect to newer taxes that are made the exclusive preserve of the center: the gift tax, wealth tax on urban immovable property, and tax on interest earnings on bank deposits.

The data seem to bear out some of the above contentions. For example, between 1980-81 and 1987-88, income tax revenue grew by about 90 per cent: Tax-revenue sharing formulas have assigned 85 per cent of this revenue to the states, though it is collected by the center. Corporation tax revenue, which is under central control, rose by about 170 per cent in the same period¹⁶. Other examples can also be given of the same sort of phenomenon: customs duties and central excise duties, both "belonging" to the center, also rose rapidly in the same period. Nor is this a surprising outcome: to use an analogy to the behavior of individuals, those who are taxed in some directions will shift their efforts or expenditures towards less heavily taxed activities. Here, the center pays an effective "tax" on some forms of revenues through revenue-sharing, and shifts its own tax effort in other directions.

However, the analogy to the behavior of an individual can not be the whole story. After all, the center in its competition with the state governments is not in an adversarial position. The objectives of the center to some extent must include the welfare of its constituents in each state. We say "to some extent" because there is the possibility - one that seems evident for the Indian case - that each government is composed of self-interested individuals". This would

¹⁶These figures are derived from Table 5.5, World Bank (1989). Of course the evidence can only be suggestive, since other factors may have been changing as well.

¹⁷The now classic analysis of India as a "rent-seeking" society is Bardhan (1984).

then lead to adversarial competition for the control of resources. We shall return to this issue in the discussion of tax competition between the center and states, later in this section.

To recapitulate, the central government is able to circumvent the Finance Commission's intent in tax-revenue sharing, and has a **superior** command over tax resources. In practice, as we have noted in the discussion of the vertical fiscal imbalance, the center has not fully translated this **superior command** over resources into greater direct expenditures. Much has **flowed** back to the states in other ways. But as we pointed out in the context of plan transfers, the center has been able to exercise considerably more discretion than it could have done if the transfers to states were chiefly determined by exogenous formulae.

In fact, discretionary transfers appear to have grown as a proportion of revenue sharing with the states in recent years. These discretionary transfers tend to favor states with higher per capita **incomes**¹⁸. This is particularly true for transfers from the federal government that are allocated according to matching formulae, i.e., where the center matches state expenditures for a particular project or category according to a preset rule. The use of matching favors richer states to the extent that they can more easily come up with their share, and is one contributing factor in the growth of fiscal disparities among states in India. A final aspect of this issue is that state deficits have grown, and loans to states by the center have grown correspondingly: again, this is potentially a conversion of rule-based finance of the states' expenditure to discretion-based finance, since loans are based on central government discretion,

¹⁸See Chelliah, Rao and Sen (1992) and Rao and Chelliah (1990) for overviews. Rao and Das-Gupta (1993) report that specific purpose transfers from center to states rose from 11.9 per cent of total transfers in 1975-76 to 18.3 **per** cent in 1988-89 (see their Table 8). Rao and Narayana (1994) note that the capital of central public enterprises was also biased towards high income states. Rao (1994) reports some striking figures (see his Table 8). Looking at the seventh plan period, 1982-85, and at 14 major states, divided into high, middle and low income groups, statutory transfers (shared taxes and Finance Commission grants) **per** capita **were** respectively, **Rs.** 321, 439 and 472: hence these were equalizing. However, non-plan loans were, respectively, Rs. 722, 423 and 377 per capita: they particularly favored the high income states as a group. Finally, central plan assistance including centrally sponsored schemes was, respectively, **Rs.** 533, 227 and 287 per capita, again favoring high income states. Within each group **and** category there were even greater variations, suggesting that discretion in central transfers was operating in nonobvious ways.

which is swayed by political considerations. We will discuss this further in section 3.

Tax Competition between Central and State Governments

The problem of tax competition between the center and the states extends beyond issues of tax-revenue sharing discussed above. In practice, there is also considerable overlap in the imposition of taxes, particularly indirect taxes. Excise taxes by the central government, sales taxes by states, and even local taxes¹⁹ by urban government bodies may fall on the same commodities. For each type of taxation, there are often multiple rates, and there is little evidence of tax coordination between center and states²⁰. Rate multiplicity is not just a problem across levels of government. States impose a wide variety of sales tax rates and exemptions leading to significant variation in the effective tax rates imposed on different sectors and activities. For example, the state of Gujarat has 22 different sales tax rates.

There are some systematic economic analyses of the details of this complex Indian tax structure, in particular the work of Ahmad and Stern (1987, 1991), on which we draw here. The Indian ratio of taxes to GDP rose to 17% by the mid-1980s, which is high in comparison to the rest of South Asia²¹. There has also been a steady increase in the importance of indirect taxes in revenue collection since independence. Indirect tax revenues totaled 14% of GDP in the same period, while direct tax revenues were only 2.7% of GDP, the same proportion of GDP as in fiscal year 1950-51. Thus the growth of the ratio of tax revenue to GDP was due to growth in indirect tax revenue. The relative unimportance of direct tax

¹⁹In particular, there is the "octroi", which is a tax on goods entering some urban areas, and which appears to be a remnant of older times and peculiar to India.

²⁰An excellent discussion of tax competition in India in a comparative context is in Rao (1993).

²¹For Pakistan, the comparable 1985 figure was 11.2%, while it was only 7.2% for Bangladesh. See Ahmad and Stern (1991), p. 267.

revenue is illustrated by the fact that, currently, there are only about 10 million registered personal income tax payers in a population of almost 900 million. Finally, since liberalization of the trade regime, through reductions of tariff rates and the replacement of quantitative restrictions by tariffs, began in the mid-1980's, customs duties have increased in relative importance, although indirect taxes in total have not increased as a fraction of GDP.

As noted above, the specific indirect taxes imposed in India have been heavily affected by the provisions of the constitution.. Under the Government of India Act of 1935, which formed the basis for the 1950 constitution's assignment of fiscal rights and responsibilities, the provinces (precursors of present-day states) were granted jurisdiction over the taxation of final goods. This assignment, in effect, carried over to independent India. The result was that the central government increasingly relied on excise taxes on domestic production. This use of excise taxes by the center in turn led to a cascading structure of indirect taxes, with very high effective tax rates that vary greatly across sectors. In the 1980s, this problem was finally beginning to be addressed by the adoption of a system called MODVAT which allowed for rebates of some taxes under central government control²².

Ahmad and Stern (1987) have conducted a detailed analysis of possible directions of tax reform in India, given the structure summarized above. They examine the balance, within indirect taxes, of excises, sales taxes and customs duties, using the concept of social marginal cost of revenue, which is simply the loss in social welfare from the marginal rupee raised from each source. Thus a balanced tax system would be one where these social marginal costs are equalized. They also compare the estimated social marginal costs for indirect taxes with those from some possible direct tax increases. Their analysis allows for differences in evasion and in administrative costs of collection. Their results support the view that a shift towards direct taxation would be desirable, because it would reduce the social costs of raising a given aggregate tax revenue. They

²²Purohit (1993) surveys the experience with MODVAT in India, as well as comparing it with other countries' VAT schemes.

also find that a move towards a uniform per person subsidy for consumers, financed by indirect taxation, would increase welfare. The caveat they provide for this latter result is that of administrative feasibility, and this issue is not really addressed in their technical analysis. Nor does such an approach incorporate the political economy of center-state **fiscal** relations and the resulting constraints on possible changes. Finally, this kind of analysis does not address how the tax revenues are shared. As our approach suggests, the issue of tax revenue-sharing must affect the question of how taxes are collected. Hence we return to this topic in this section.

A review of the overall experience of tax revenue-sharing ²³, and the work of the Indian Finance Commissions suggests that, after some **sizeable** shifts in practice in the first decades after independence, changes in revenue sharing have been marginal. The Ninth Finance Commission, the last one to report, was given a fairly broad charge, in terms of questions of federalism it was asked to address. This was a change in approach **from what** previous commissions were asked to do. In particular, it was asked to adopt a normative approach for assessing the receipts and expenditures of the center as well as the states, and to **assess** the debt positions of the states. Furthermore, expenditures under the national five-year plans, previously excluded **from** Finance commission scrutiny, were now included implicitly in the Ninth Commission's terms of **reference**²⁴. While the softening of the artificial distinction between plan and non-plan accounts **was** a desirable reform, the recommendations did not depart significantly from those of previous **commissions**, and the issues before the Tenth Finance Commission, currently working on its report, are essentially the **same** as they were for its predecessor²⁵.

Despite the constitutional mandate of the commissions, the central government has been **reluctant** to adopt those recommendations of **recent**

²³See, for example, Gurumurthi, 1993.

²⁴See Thakur, 1989, Ch.10.

²⁵See, in particular, Chelliah et al (1992), Rao (1990) and Rao and Chelliah (1990).

commissions that would provide it with no benefits. An example of this behavior is the recommendation of the Eighth Finance Commission in 1984, that states be allowed to tax advertisements in newspapers and journals. This recommendation was never acted on²⁶. The recent experience, therefore, suggests that a fresh look at these issues is worthwhile. Numerous detailed and practical suggestions for reforming some or all of the formulae used for revenue-sharing have been made.²⁷ However, as is the case for tax reform suggestions, these recommendations have been partial: they specify how taxes should be shared without examining how and from where they should be collected.

Tax Competition between States

Up to now we have focused on center-state fiscal relations. Another feature of fiscal federalism is, of course, the competition among the lower level components of the federation. Tax competition, which includes the phenomenon of tax exporting (the choice of taxes to shift tax burdens to nonresidents), has received considerable attention in the theoretical literature on fiscal federalism²⁸. Examples of this phenomenon are well documented in a general way for the Indian case, though there is little systematic quantitative analysis of the distortions associated with tax competition among states or localities in India²⁹. What is particularly interesting about the Indian case is that the center has not been able or willing to try and coordinate state actions with respect to taxation. Its ability to do so would clearly have been enhanced by something akin to the provision of the United States constitution, which prevents

²⁶Other examples of this kind of phenomenon may be found in Gurumurthi (1993).

²⁷ For example, see Singh, 1987; Gaur, 1988; Singh, 1988; Thakur, 1989; Chelliah et al, 1992; and Gurumurthi, 1993.

²⁸See Wildasin (1986) for a comprehensive survey.

²⁹Rao (1993) is a good source of examples of tax competition in India. The only quantitative analysis of which we are aware is Rao and Vaillancourt (1993). Ahmad and Stern's analysis is at a more aggregate level, and so does not look at interjurisdictional tax competition.

restraints on interstate commerce, and which has been used to rule out taxation of interstate trade. However, the question arises as to why some kind of cooperative agreement has not been possible in this respect. We conjecture that the heterogeneity of the Indian states has made the requisite political coalition more difficult, but this requires more formal and careful analysis of the coalitional bargaining structure of the situation, which is somewhat outside our current scope.

Additional Issues

Two final aspects of fiscal federalism in India need to be mentioned in this overview. First, we note the growing importance of loans from the center to the state governments. Since states have not been able to raise adequate resources on their capital accounts, they have regularly borrowed from the center. We alluded to this earlier in trying to understand the pattern of central revenue raising efforts, and suggested that it, too, was an example of a conversion from a revenue system which would give the states more control over their expenditures to one where the Center would have greater discretion over state expenditures. This discretion can come about in two ways. First, the center has the power to grant the loans. Furthermore, it has the power, which it has used in practice, to write off those loans as well. Thus, this particular institutional arrangement has had some pernicious political implications³⁰. These loans have been made subject to political discretion, and political considerations have often led to loans being written off. This issue is therefore an important one in interpreting the Indian fiscal experience, and in thinking about institutional changes.

The second and final feature we wish to mention is that of the role of lower level governments in the federal fiscal structure. When we realize that

³⁰Two analogies come to mind. One is the practice, widespread in India now, of governments making loans to farmers and then "forgiving" them at election time. The second is the existence of soft budget constraints for firms in the erstwhile socialist economies, and for public enterprises everywhere. Some figures on loans to states grouped by income were given in footnote 18.

most of the Indian states have populations the size of European countries or greater, it is striking to see how weak local governments are in India". This is presumably a legacy of the historical evolution of the Indian union, but it raises an additional set of issues: what is the appropriate geographic or population scope of governments for different tasks? There appears to be little in the literature on Indian fiscal federalism on this topic, though the theoretical principles are clear". Again, if we ask why this situation has persisted, we may draw some lessons from the analysis of central-state relations, and we will hazard some thoughts on this in the conclusion.

Summary

Our overview has focused on three aspects of Indian fiscal federalism: the vertical fiscal imbalance between the center and the states, tax competition between the center and the states, and finally tax competition among the states themselves. Our discussion has suggested that an understanding of the operation of Indian fiscal federalism requires attention to the political and economic incentives of the different levels of government, and how they interact. Vertical fiscal relations matter for horizontal competition, as well. In particular, the most interesting question, since we know that a benevolent, well-informed center could resolve the problem, is why horizontal competition persists to such a great degree in the Indian fiscal system. Thus in the next section we will focus on the interaction of the center with the states, rather than interactions among the states. We will attempt to treat the issues discussed in this section in as unified a way as possible.

³¹This may change with the passage and implementation of two amendments to the constitution which require states to "hold regular elections to rural and urban bodies and also appoint state finance commissions at regular intervals to recommend transfers to these bodies" (Rao, 1994, p.2).

³²The only studies of local finances of which we are aware are those of Datta (1984) and Jetha (1992). A clear exposition of the theoretical principles on this topic is Olson (1986).

3. Political Economy of Fiscal Federalism

The picture of Indian fiscal federalism that emerges from the overview is one of inefficiencies in revenue collection and expenditure allocation, and an urgent problem of fiscal deficits. The inefficiencies in the tax structure are indicated by the various features of the tax system at **different** levels: cascading taxes, protectionist taxes, multiple and widely varying tax rates, absence of taxation of some sectors, and narrow tax bases. The results are a highly distortionary tax system and resulting inefficiencies. Many of these problems could and would exist in a unitary governmental system, but they appear to be exacerbated by the particular institutional structures of Indian federalism.

If all levels of government were benevolent and perfectly informed, it would be an easy matter to discuss optimal policies. Whatever the federal structure, the central government could use corrective taxes and subsidies for any positive or negative externalities that arose at lower levels of **decision-making**. If we remove the assumption of perfect information, the problem becomes more interesting and complex, but again essentially straightforward: design the corrective policies to be **incentive compatible**, and that is all. The solution is essentially based purely on technical economic considerations of marginal benefits and **costs**. However, it is **clear** from the literature on Indian fiscal federalism that such solutions have been proposed in abundance. There are detailed analyses of formulae and outcomes for the work of the Planning and Finance Commissions over the last decades. The political and incentive issues are recognized, of **course**, but are not modeled systematically.

Our analysis, therefore, begins with the premise that governments are made up of self-interested individuals*. The implication of this approach is that

³³Again, Wildasin (1986) thoroughly covers this approach.

³⁴This is, of course, the central tenet of the public choice school of thought, associated with James Buchanan. See also Olson (1971).

the government is subject to rent-seeking behavior³⁵. The simplest models posit a given rent and analyze how competition for that rent occurs. More generally, government decision-makers, by their actions, are in a position to create rents. They cannot necessarily capture these **rents** directly, but it is often the case that they indirectly get a **share** through the competition of others for those rents. In a standard example, a politician may not be able to directly take advantage of an *import quota*, but it is an easy matter to allocate the quota to an industrialist in return for bribes, campaign contributions or the like³⁶.

In the context of government susceptibility to corruption, this problem has been extensively discussed and condemned. However; it is also possible that activities that come under the category of rent-seeking may inseparably have a positive role as well. This has been clearly brought out, in the context of behavior in organizations, in a series of papers by Milgrom (1988) and Milgrom and Roberts (1988, 1990a,b)³⁷. They use the neutral term "influence activities". Their **insight**, with respect to the design of institutions or organizations, is: if the benefits from such activities in the conveyance of information for better resource allocation are relatively low, the central decision-maker should be insulated from lower level influence activities by not having discretion in such matters.

Returning to Indian fiscal federalism, it is striking how its pattern of development has been towards increasing discretionary control of resources by the center. Part of this may simply be explained by a divergence of objectives. **If** the center wants a certain **activity** or project undertaken, it can earmark its transfer to the state for that purpose, or it can provide inducements through

³⁵The term is due to Krueger (1974). An earlier analysis of similar behavior is due to Tullock (1967), and the same logic underlies Olson's (1971) contribution.

³⁶Another favored route is where the industrialist is a close and subordinate relative, such as a son or son-in-law.

³⁷The positive role of lobbying activities has been developed for the case of government and industry in Kohli (1992).

matching formulas. This is standard in discussions of fiscal federalism³⁸. In the Indian case, however, the central government often effectively underwrites expenditures of the state governments that it does not control or direct. It does this through the granting of loans that are subsequently forgiven. What makes this method of providing resources superior to directly providing states with additional funds by allowing tax-revenue sharing of, say income tax surcharges?

Several answers are possible. There are different categories of expenditures in terms of the accounting framework used: current and capital. so the above policy might not work. But this can be countered by observing the considerable degree of fungibility of funds. For example, there is no guarantee that a rupee raised by taxation will go for current expenditure, and a rupee raised by borrowing will go for capital expenditure, even if the borrowing is earmarked for investment, since the government can reallocate to current expenditure money that would have been spent on capital projects in the absence of the borrowing.

Another answer could be that a formulaic allocation of revenues might not serve the equity objectives of the central government. But we have observed that these objectives did not anyway appear to be met by transfers in practice. Furthermore, the formulae used have typically had some equity or equalizing considerations built in to them. Thus the goal of equity does not seem to justify the pattern of discretionary transfers from the center to the states.

The remaining explanation is that the system of financing the state governments has allowed the center the greatest discretion to achieve goals that are well-defined, and therefore fit the standard model of economic behavior, but are determined by government decision-makers' self interest, rather than aggregate social welfare. It is worth clarifying here that this notion of self interest does not exclude attention to the preferences of constituents. It is easy to think of the government decision-maker trading off current gain against

³⁸Oates, a significant early contributor to this literature, surveys it in Oates (1991).

the possibility of future gain through re-election³⁹. Alternatively, government decision makers may pursue self-interest within the constraints imposed by the prime requirement of satisfying voters and winning re-election. We shall explore this sort of framework in the following section.

The next question that arises, is why control over state governments in this manner should matter for the central decision-maker seeking to maximize long run self interest? We suggest that the states are the key political units for control of the central government. In other words, a pliable and cooperative state government in India can be very important in delivering a large fraction of its national parliamentary seats at the time of a general election. This is by no means a guarantee, but casual observation of Indian elections does suggest this as a possibility.

Two further issues remain. First, in the context of fiscal federalism, what is the analogue of the owner of a firm in the organizational setting as considered by Milgrom and Roberts? We have suggested that the central government itself does not fulfil that role, since its interests lie in creating discretionary power and responding to influence activities. The closest analogue, then, must be the population of the country. The problem then arises as to how they can collectively impose rules that prevent the kind of discretionary behavior that we have suggested arises in the Indian case. Note once more that such discretionary actions by the central government are not in themselves undesirable. The standard arguments in the fiscal federalism literature could justify them if the objectives of government were equity and externality correction that could not adequately be achieved by lower level governments.

One can think of different solutions to this problem of imposition of collective will of the populace on its representatives. The ideal might seem to be a rewriting of the Constitution. Yet no constitution can be detailed enough to completely rule out such behavior. Furthermore, achieving this constitutional change would seem to be a process fraught with difficulties and pitfalls. A

³⁹For an example of such models see Appelbaum and Katz (1987).

second, more feasible route, would seem to be the changing of the rules that govern the interaction between the center and states within the current constitutional framework.

The second issue has to do with the behavior of the state governments. de have emphasized the increasing discretionary aspects of the central government's transfers to the states. In a sense, this implies control of the center over the expenditures of state governments. At the same time, the states have been running deficits which have been covered by central loans and transfers, and they are perceived as being profligate in many ways⁴⁰. The answer to this, presumably, lies in the state governments' responsiveness to influence activities from constituents, for example, farmers who receive subsidies, and their power in delivering votes to the center. A possible prediction, therefore, would be that as power at the center becomes more solidified than it has been recently, the center will be able to squeeze state expenditures more successfully, shifting the focus of influence activities by various interest groups to the center⁴¹.

The implications of what we have suggested in this section are not immediately obvious, but they are worth discussing. The key implication seems to be that any feasible reform must either work within the political constraints, or finesse them. Reforms that make everyone better off are clearly going to be easiest to implement. The central government is moving towards a full scale introduction of a VAT. This clearly has the potential to increase efficiency. It is less clear how those gains will be divided. To the extent that reforms can increase the size of the economy, the trade-off for central decision-makers, in terms of different ways of achieving their self-interest, may also change. If they gain less from discretionary influence on state government expenditures and

⁴⁰See, for example, the article on this issue in The Economist magazine, January 20, 1994.

⁴¹As an aside, we may note that if we apply the same logic of self interest and rent-seeking to the state governments, we may begin to extract some insight into the complex and distortionary tax systems at the state level, and the absence of strong or effective local governments in India. Clearly, the phenomena are so numerous, however, that more work needs to be done on this aspect.

other, political, actions, they may be more willing to allow a reassignment of tax revenue rights that more closely aligns expenditures and revenues at the state level and provides better incentives for tax effort. There is no constitutional problem, in principle, with, for example, all direct taxes being collected and allocated by the center and all domestic indirect taxes by the states. It could also be the case that a smaller vertical fiscal imbalance through such reassignments could be consistent with more efficient revenue raising without upsetting the central government's political control at the margin. Finally, we note once again that the urgency of the overall fiscal deficit exerts pressure to change the current fiscal federal structure.

In the next section, we step back from these more general thoughts on policy and reform, to sketch a model that incorporates some of the above mentioned features of Indian fiscal federalism. In particular, we discuss how different layers of government may pursue self interest within the context of also satisfying voters. We discuss how two layers of government can interact in such a context. While we are far from capturing all the phenomena described in this section and the last, we believe the model adds some insights into the specifics of the political economy of federalism.

4. Outline of a Model

We begin this section with a brief-mention of related work. In terms of the median voter framework that we use below, the closest work we are aware of is that of Persson and Tabellini (1992). They examine alternative fiscal federal structures in the context of providing social insurance, and investigate methods of alleviating moral hazard problems in the provision of such insurance by different levels of government. Our model differs in the nature of the public good being provided, and its attention to influence activities. Murty and Ray (1990) formally examine the problem of optimal commodity taxation in a federal system, comparing centralized and decentralized decision-making. They use a standard social welfare framework, rather than being concerned with political

economy aspects. Since they focus on tax coordination issues, their work is somewhat complementary to our model. Wildasin (1983, 1984) examines the welfare effects of intergovernment grants in situations where households may be mobile, and where local governments use distortionary taxes. Again, these models highlight features that are complementary to those considered in our analysis. While we have informally discussed constraints on policy reforms, we have not dealt with these in our model. An example of how this may be done in the context of commodity tax reform is the work of Kanbur and Myles (1993). Finally, we have outlined a static model, without intertemporal budget constraints. An analysis of fiscal deficits in a dynamic political economy model, albeit without layers of government, is that of Velasco (1992).

The model we outline here is an attempt to incorporate several features of Indian fiscal federalism in a formal framework. This enables one to see more precisely the assumptions that underlie various informal arguments that have been made. In keeping with our focus, we shall restrict attention to two levels of government. The higher level will be the center, and the multiple jurisdictions under it will be indexed by l to indicate the lower level. We may think of these as state, provincial or local governments, though we will have the major Indian states in mind in most of our analysis, as we did in our previous discussion. We will assume there are L of these lower level governments.

Basic assumptions

Each government is assumed to provide an amount of a public good. For the center, this amount is denoted by G , and for lower level government l it is G_l . There is also a single private good, and the amount of this in jurisdiction l is denoted by x_l . We assume that household preferences over the three goods are identical up to a parameter, b , that measures the relative preference for public versus private goods. Thus the utility function is given by

$$bU(G, G_l) + W(x_l).$$

Note that two further assumptions are incorporated in the specification, First, the relative preference measured by b is for both public goods versus the private good. Secondly, we assume separability in the preferences of public versus private goods. These assumptions simplify the model without affecting the main insights.

As we shall see, further simplifications can have important implications. Two examples of these are assuming that utility is linear in private good consumption, so that it becomes $bU(G, G_1) + X_1$, or that it is separable in the two public goods, so it becomes $b[U(G) + V(G_1)] + W(X_1)$. Of course both these assumptions can be imposed simultaneously as well.

Next we describe assumptions on the distribution of the preference parameter b . This is assumed to have a cumulative distribution function $F(b)$, with support $[0,1]$. The median of b in jurisdiction 1 is defined by $F_1(b) = 1/2$, and denoted by b_1^m . There is also a distribution of b at the national level, which is the average of the lower level distributions. Specifically, if n_1 is the number of individuals, households or voters in jurisdiction 1, the national distribution of b is given by

$$(1) \quad F(b) = \sum n_1 F_1(b) / \sum n_1$$

However, we shall see that this distribution is not of direct interest in the analysis, since what matters to the central government is the median demand level for the public good, rather than the median value of b at the national level.

Budget constraints and taxes

Turning to the budget constraints in the model, we assume that income per capita in jurisdiction 1 is given by I_1 . This is exogenous and identical for everyone in that jurisdiction. However, it may differ across jurisdictions: there may be rich and poor states, for example. Both levels of government impose

taxes on this income" . For simplicity, we shall assume these taxes are proportional to income, and that there is no deductibility of lower level taxes⁴³. The respective tax rates for center. and lower levels are t and t_1 . There are also costs of collecting the taxes, denoted by per rupee amounts k and k_1 respectively, so the tax revenues at the two levels are given by

$$\begin{aligned} (2) \quad \text{Center:} & \quad (C-k) \sum I_i n_i \\ \text{State:} & \quad (t_1 - k_1) I_1 n_1 \end{aligned}$$

The budget constraint of an individual is given by

$$(3) \quad x_i = I_i - t_i I_i - t I_i$$

A word on the interpretation of collection costs is in order. They could also include losses due to bribery and corruption, though one has to be careful with this interpretation, since corruption in tax administration often means that less than the official taxes are paid by individuals. Here we are thinking of t and t_1 as more or less the official tax rates. Furthermore, there is no *game* being played at this level in our model: the costs k and k_1 are exogenous. Finally, one would guess that receipts from corruption in tax administration are localized in tax departments, while political decision makers benefit more from the power to produce and allocate public goods.

A separate issue also arises in our formulation. If some of the collection costs go into the pockets of government officials, this should show up in individual budget constraints. We shall sidestep this complication by arguing that the number of individuals who substantially benefit from corruption is relatively small, so that neglecting these transfers is immaterial for the analysis.

⁴²Note that since we are treating the private good as an aggregate, this tax is to be interpreted as a composite of the usual income tax and various commodity taxes. We are, however, restricting ourselves to a closed economy, so there is no model analogue of customs duties, which have been an important revenue source in India.

⁴³ These assumptions simplify algebra without affecting essential features of the model.

Government expenditures

Next we turn to the expenditure side. Governments use their tax revenues to finance public goods. The unit cost for the national or central public good is denoted by c . This is taken to include the waste,⁴ administrative costs and corruption that may be involved in the production of the public good. Similarly, the unit cost of the public good produced in jurisdiction l is c_l . The earlier discussion of collection costs and the nature and effects of corruption also applies to these production costs, with the difference that gains here are more likely to matter to political decision makers. For the present, we assume there are no intergovernment transfers. We also restrict attention to a static case, so there is no intertemporal reallocation possible by government, and current expenditure on public goods must be financed by current tax revenues. Then the budget constraints are:

$$(4) \quad \text{Center:} \quad CG = (t-k) \sum I_l n_l$$

$$\text{State:} \quad c_l G_l = (t_l - k_l) I_l n_l$$

Decision-making

We now discuss the objectives of the central and local governments in this model. We incorporate political objectives appropriate for a democracy in the usual way through the assumption that the government follows the preferences of the median voter. The logic of this assumption is that a majority of voters will favor this over any other alternative, provided preferences are single-peaked so that alternatives can be ordered in a unique way". This latter requirement is ensured by our assumptions about household preferences and budgets. The

⁴A brief survey of the scope of the median voter approach is in Calvert (1986). Lindbeck and Weibull (1993) follow some earlier papers in developing a model of policy motivated candidates or parties, where political competition converges on the mean preference. The insights of our model carry over to this alternative framework: calculating the mean is just somewhat more cumbersome in examples.

alternatives here are the levels of the public goods. Another goal of government decision-makers may be to line their own pockets. Implicitly, this is one of the possible reasons, in addition to power and prestige, that they wish to get re-elected by pleasing the majority. In the model so far, we may think of this objective as being met through some **share** of the spending on public goods. Thus, some part of the unit cost of each level of public good is due to appropriation of funds by individuals in government. For the moment, we assume that this is exogenous. Then the way that this second objective **can be** met is to increase the levels of the public goods. In this model, this objective is subordinate to doing what the median voter wants". However, this other government objective should be borne in mind, and we will return to a discussion of its role after we have explored the implications of the median voter assumption in our model.

The decision-making at the state or local level is straightforward, because everyone is identical up to the parameter b and faces identical taxes. **This implies** that the person with the median b also determines the median G_1 . This value is determined as follows, assuming that preferences for the private good are linear. The individual's utility, incorporating the government budget constraint, is:

$$(5) \quad bU(G, G_1) + I_1 - t_1 I_1 - t I_1 = bU(G, G_1) + I_1 - \frac{c_1 G_1}{n_1} - k_1 I_1 - \frac{c G I_1}{\sum n_i I_i} - k I_1$$

The preferred level of the local public good for this individual is given by the first order condition" :

$$(6) \quad bU_2(G, G_1) - \frac{c_1}{n_1} = 0$$

⁴⁵One can think of an alternative formulation, such as that of Appelbaum and Katz (1987), where these two objectives are weighted in some way. Their formulation assumes an **exogenous** probability of re-election (or reappointment) function, rather than adherence to the median voter's wishes. We will explore this specification in future work,

⁴⁶Here and elsewhere, we assume that functions satisfy appropriate concavity properties so that first order conditions characterize unique interior optima, unless otherwise stated.

Here, the subscript "2" indicates the derivative with respect to the second argument. Recall that b_i^m is the median b for this jurisdiction. Then, the above equation, with this value of b , implicitly defines the median level of the demand for the local public good which will be chosen by the lower level government. We may write it as $G_i^m(G, b_i^m, c_i/n_i)$. Note the dependence on the level of the national public good. The nature of this dependence can vary. If a higher G reduces the marginal Utility of the lower level public good, i.e., the goods are weak substitutes, it will reduce G_i^m . In this case, a higher level of the national public good will reduce the amount that can be pocketed by lower level government. Hence, the two levels of government are in competition with respect to their choices. If the two levels of public good are complementary in individual utility, this complementarity carries over to the interests of the two levels of government. In our model these strategic considerations are within the constraints imposed by the need to satisfy the median voter, since we assume that this is what the vote-maximizing government does, whatever the choice of another level of government. Finally, in the case where the utility of the two levels of public goods is separable, there is no such strategic interaction.

We may also discuss the effects of corruption and inefficiency on the demands and provision of the local public good. Clearly, increases in costs decrease the demand for and amount of the public good. Thus, one could easily graft on a function that allows political decision makers to endogenously appropriate more per unit of the public good. This raises unit cost, and decreases the amount provided. With plausible assumptions, there would be an interior optimum for the government, in terms of the amount of corruption, analogous to the monopolist which has an optimal price where marginal profit is zero. A complication that this possibility raises is that voters might be sensitive to the level of corruption through this channel, and not just to the level of the public good provided. This would require an extension of the model along the lines of Appelbaum and Katz (1987), and we do not take it up here.

A final point with respect to the first order condition above is that corruption and other costs in tax collection do not enter the determination of

the level of the local public good. However, this is just a consequence of the special, quasilinear utility function. For example, if utility is separable, but not quasilinear, the condition becomes

$$(7) \quad bU_2(G, G_1) - W'(\cdot) \frac{C_1}{n_1} = 0$$

and the additional derivative in the second term does depend on the costs of tax collection.

We now turn to describing how the central government chooses G according to the preferences of the median voter at the national level. The key difference from the lower level is that, since incomes vary across lower level jurisdictions, there is no one-to-one correspondence between the preference parameter b and the demand for the national public good. We will first illustrate this with a special-case example, where utility is separable in the public goods at the two levels. Then we will turn to discussion of the more general case where there are interaction effects in the utility function. This begins to get to the core of some of the issues in Indian fiscal federalism. The subsequent steps will be to introduce representative government, and then intergovernmental transfers.

Example 1

In the example, we assume there are two states as the lower level jurisdiction, each of size n . Income per capita in state 1 is 1 and in state 2 is 2. There are no collection costs for taxes. The unit costs of the public goods are $2n$ and n , respectively, at the national and state levels. Note that this assumption is consistent with the national public good having twice the size per unit, as it has to reach twice as many people. In particular, there are no economies of scale in this example, whereas there might be in general. The individual utility function is $b(\ln G + \ln G_1) + x_1$. The distribution of b in each state is uniform on $[0, 1]$, so the median b in each state is $1/2$. Thus, the national distribution of b is also the same. At the state level, the first

order condition is just $b/G, -n/n = 0$. Therefore, substituting in the median value of $1/2$, we see that the equilibrium amount of G_i is $1/2$. For the national public good, the general first order condition in this case is

$$(8) \quad bU_1(G, G_1) - \frac{cT_1}{\sum I_1 q_1} = 0$$

Substituting in the particular values from the example, we find that for state 1 this reduces to $b/G - 2n/n(1+2) = 0$, so that $G^d(b) = 3b/2$, where the superscript indicates that this is the demand of individual with preference parameter b , and not necessarily the outcome. Similarly, in state 2, the demand by individual b is $G^d(b) = 3b/4$. Individuals in the rich state demand less of the national public good because, with a proportional tax on income, they have to pay more for it. Now, to calculate the demand of the median person, we have to derive the distribution of demand levels, G^d . For state 1, the c.d.f. of G^d is $2G/3$, on the interval $[0, 3/2]$. For state 2, it is $4G/3$, on the interval $[0, 3/4]$. Since the states are of equal size, the national distribution of G^d is obtained by taking the simple average of these two functions. We obtain:

$$H(G) = \begin{cases} G & \text{on } [0, 3/4] \\ 1/2 + G/3 & \text{on } [3/4, 3/2] \end{cases}$$

Thus, the median of this distribution is $G = 1/2$, and this is what will be chosen by the center following median voter preferences. This level of G is optimal for individuals with $b = 1/3$ in state 1 and $b = 2/3$ in state 2. This illustrates the lack of a one-to-one correspondence between the distributions of b at the state level or national level and the distribution of demands for G at the national level.

The above example is particularly simple because the choices of public goods at the national and lower levels are independent. Suppose this is not the case, as in the general first order condition above. There, we saw that the demand for G by individual b in state 1 is a function $G^d(G_1, b, s_1)$, where the last argument is simply a shorthand for the cost share term. Non the distribution of demands for the national public good depends on the levels of the

state public goods. These levels, however, also depend on the level of the national public good, as we saw earlier. That dependence did not matter in determining the median demand at the state level, because of the correspondence between the distributions of b and G_i . Here, however, the median demand for G can depend on the whole distribution of levels of state public goods. At the equilibrium, it must be true that the choices of the levels of government are consistent. In other words, the level of G chosen is the median of a distribution based on substituting each of the $G_i^m(G, b_i^m, c_i/n_i)$ into the function $G^d(G_i, b, s_i)$.

Example 2

To make this point clearer, we consider another example, where we change the utility function to $b \ln(G + G_i) + x_i$; that is, the two public goods are perfect substitutes. We also change the assumptions on the distributions of preferences. In state 1, there are three people, all with $b = 1/2$. In state 2, there are three people with levels of b given by $1/4, 1/2, 3/4$. Unit cost for the national public good is 2, and for the state public goods it is $1/2$ and $3/2$ respectively. Income per capita in each state is 1. It is now possible to derive the following demand functions.

State 1: Each person has demand $G_i^d = 1 - G$, wherever this is nonnegative.

State 2: The median demand is $G_2^d = 1/3 - G$ wherever this is nonnegative.

Center: Individuals in state 1 each have demand $G^d = 1 - G_1$ wherever nonnegative.

Individual demands in state 2 are (with the condition that they be nonnegative) :

$$1/6 - G_2, 1/3 - G_2, 2/3 - G_2.$$

The central choice will be the median of the six individual demand values. This median depends on the state level choices. Now suppose $G_1 \leq 1/3$. This implies $G \geq 2/3$. This, from the state 2 median demand function, in turn implies

G_2 must be 0. The median demand for G must be the average⁴ of $2/3$ and the demand by any one of the identical people in state 1, whose demands for G exceed $2/3$. The latter, however, is $1 - G_1$, which must be equal to G if it is positive. Hence, this can not be an equilibrium.

Now, instead, suppose $1/3 < G_1 < 2/3$. It is still the case that G_2 must be zero. This is due to the fact that consistency requires $1 - G_1$ to be the national median and, hence, $G_2 = 1/3 - G = 1/3 - (1 - G_1)$, i.e., $G_1 = G_2 + 2/3$, if G_2 is positive, which contradicts the initial supposition. Hence, if $1/3 < G < 2/3$, $G_1 = 1 - G$, and $G_2 = 0$, this is a possible equilibrium.

In such cases, where there is interdependence of central and lower level government choices, the issue of strategic behavior becomes important. For example, one could think of the center choosing G given the various lower level choices and the equilibrium being a fixed point of the game. Alternatively, the center could be able to precommit, knowing how the lower level governments will respond to its choices. Why should either level of government care, since they always do what the median voter wants? The answer is that higher public expenditure at your level implies a greater cut for you as the political decision maker. In the case of perfect substitutes in the above example, the interests of the two levels of government are opposed, in this respect. A gain for one is a loss for the other. This will not be the case in general and, in some cases, interests may even work in the same direction.

Representative government

A final example will illustrate another aspect of political decision-making that we have not incorporated in the above. Political support at the center depends not on direct elections, but on gaining a majority in parliament. Hence the central government may not be concerned with the median voter per se, but with gaining such a parliamentary majority. At the same time, the median voter

⁴The use of the average here is simply because, with six individuals, the median is the average of the third and fourth individuals' demands.

logic still applies in this case, as we will illustrate with the next example. Therefore, consider the following modification of the first example, with Separability of national and state level public good preferences. Now let there be a third state, also of the same size, but with a different income level, $1/2$. Now the demand for the national public good in this poorest state is $G^d = 3b$. Hence the distribution of demands in this state is $G/3$ on $[0, 3]$. As before, we may construct the national distribution of demands for the national public good. This is given by

$$\begin{aligned} &= 7G/9 && \text{on } [0, 3/4] \\ H(G) &= 1/3 + G/3 && \text{on } [3/4, 3/2] \\ &= 2/3 + G/9 && \text{on } [3/2, 3]. \end{aligned}$$

If, as we assumed before, the central government directly cares about the national median voter, this is given by the demand level $9/14$. However, if the objective is to win support in a majority of constituencies, the optimal choice is different. To see this, assume that each state is a single constituency. Then $9/14$ will not be optimal. For example, the level $2/3$, which is greater, will be preferred by majorities in the two poorer constituencies or states, in a pairwise choice versus $9/14$. In fact, the optimal choice here must be $G = 3/4$, or the preferred level for the median voter in the median constituency.

Aside from changing the optimal level of the national public good from the point of view of the center, representative democracy has another consequence for fiscal federalism. Now the central government requires more information than it did in the case of direct democracy, where it had to know only the national distribution of demands for the centrally provided public good. Here it must be able to rank constituencies in terms of demands for the public good⁴⁸, and then determine what the median voter in the median constituency would most prefer. This creates a role for state governments as providers of information, and possibly implementers of the centrally desired level of the national public good.

⁴⁸Formally, it seems that the required ranking concept would be the first order stochastic dominance partial ordering.

Furthermore, if the central government can not determine what the optimal level of the national public good should be, it may wish to substitute spending by the relevant state government (where the median constituency may be located) as a way of gaining political support. This alternative, of course, would require the state and central governments to be complementary in terms of political support, which would be the case if they were composed of the same or allied political parties. This provides a rationale for intergovernmental transfers beyond the usual economic ones.

Intergovernmental transfers

So far, we have not looked at the possibility of transfers between states or levels of government. This is our next step, and the most significant one in terms of analyzing Indian fiscal **federalism**⁴⁹. We can enumerate the various positive reasons for such transfers. First, the central government may be relatively more effective or efficient at collecting tax revenues than the states. The standard reasons for this include tax coordination and the desire to avoid tax flight by mobile factors. What is also plausible in the Indian context is the fact that reasons such as the concentration of administrative talent at the center can lead to greater ease in enforcing compliance at the center. At the same time, this would not translate into higher expenditure directly by the center for several possible reasons. The states may be able to deliver public goods at their level at lower unit costs than the center. Furthermore, as suggested above, they may know individual preferences better than the center does. In our model, for example, the center may know only the aggregate distribution of preferences or public good demands without knowing them at each lower level jurisdiction. This pertains to possible central provision of lower level public goods, and not to central provision of the national public good. If the center raised more revenue and simply spent it on

⁴⁹A recent critical survey of India's experience with intergovernmental transfers is Rao (1994).

a **higher** level of the national public good, this would not achieve the desired pattern of public good spending. This point is in addition to the political and informational reasons discussed in the previous paragraph.

While all the above are standard reasons for intergovernmental transfers that can be included in our model without major changes, there are two additional ones that are not directly incorporated. First, the central government may wish to correct for interjurisdictional externalities or **spillovers** through the use of intergovernment transfers". Second, it may wish to achieve redistribution on equity grounds, and can not do it effectively by direct transfers to individuals for informational or similar reasons⁵¹. While these considerations are not directly incorporated in our model, we may still think of them as influencing the central government's need for transfers to lower level governments.

We turn now to considering more formally the effects of introducing intergovernment transfers in the model outlined above. Let R_1 be the amount transferred to jurisdiction 1. Then the budget constraint for the lower level government becomes:

$$(9) \quad c_1 G_1 = (t_1 - k_1) I_1 n_1 + R_1$$

If the transfer is not tied to marginal spending on the local public good, then this just serves as a lump-sum grant⁵². For example, if utility is quasilinear, there is no stimulative effect on consumption of the lower level public good. The effect of the transfer will be purely to raise private good consumption, ceteris paribus. The full effect, however, requires a consideration of the central budget constraint which becomes, with these transfers:

⁵⁰This is the focus of Gordon (1983), for example.

⁵¹General recent surveys of these kinds of issues may be found in Wildasin (1986) as well as in King (1984).

⁵²This is also true even if the transfer is earmarked, except if the lower level government happens to be at the resulting kink in its budget constraint. King (1984) is a useful reference on such points.

$$(10) \quad cG = (t-k) \sum I_i n_i - \sum R_i$$

Again, with quasilinear utility, the equilibrium amount of the national public good is unchanged, but since the resulting tax rates are different, there is an effect on private consumption. In our earlier example 1, with two states and a continuum of preference parameters, the rich state is taxed more by the center using a proportional tax. Assuming that the collection costs are unchanged, the net result of the transfers will be no change in public good levels in any jurisdiction, but a possible redistribution from the rich state to the poor state⁵³. Since total spending on public goods is unchanged, aggregate tax revenue, net of collection costs, is unchanged. However, if the central government can raise revenue more efficiently, for example if \bar{k} and k_i are proportional to the respective tax rates, with \bar{k} being a smaller proportion, shifting the tax burden to central taxes from state taxes has the effect of reducing the losses to individuals from the tax collection process. If the transfers are chosen appropriately as well, it is conceivable that this arrangement could make all individuals better off than the situation where there are no transfers.

Neglecting differences in tax collection costs, we next comment on the implications of intergovernment transfers for political support in this model. so far, we have assumed that the central government chooses only G , and is driven by political competition to choose based on the preferences of the median voter (in the median state in the case of representative democracy) with respect to G . Taxes, which finance G , are uniquely determined by G when there are no intergovernment transfers. When intergovernment transfers are introduced, this adds several dimensions to the center's decision problem. For concreteness of exposition, we shall work with the three state example introduced in the discussion of representative government.

⁵³The net transfer to the poor state is $2R_1/3 - R_2/3$, which is positive as long as the rich state is not heavily favored in terms of the size of the direct transfer.

In general, net transfers per capita resulting from intergovernment grants (which are financed by changes in central taxation) are given by

$$(11) \quad \frac{R_1}{n_1} - \frac{I_1 \Sigma R_1}{\Sigma I_1 n_1}.$$

In the example, with equal state population sizes, n , and per capita incomes of $1/2, 1$ and 2 , one obtains the following expressions for per capita net transfers: $(6R_1 - R_2 - R_3)/7n$, $(-2R_1 + 5R_2 - 2R_3)/7n$, and $(-4R_1 - 4R_2 + 3R_3)/7n$. These sum up to one, of course. If we fix one of the transfers, say R_1 , this leaves two degrees of freedom for the center. It can choose the other two R 's to make one or two net transfers positive. If it is motivated by political support, it seems it will choose the latter course of action, benefitting two states through intergovernment transfers at the expense of the third. However, unlike in the choice of the level of the public good, there is no natural ordering of states, so there are three different sets of policies⁵⁴ in this example that will satisfy the majority preference criterion, that is, any of the subsets of two states out of the three. Note also that everyone in a given state is equally affected, in this kind of example, by the intergovernment transfers.

One way to resolve this indeterminacy is to assume that the choice of transfers will be made to agree with the choice of the level of the national public good. Recall that the best choice of G for the central government in this case is $3/4$, the preferred level for the median voter in the middle income state. This is supported by majorities in the two poorer states, here labelled 1 and 2. Hence, the intergovernment transfers could be chosen so that net transfers, after accounting for taxes to finance the R 's, are positive for these two states. A more complete, but considerably more complex approach would be to look jointly at central policies, that is, the vector (G, R_1, R_2, R_3) and examine what would

⁵⁴Within each set there is further indeterminacy of the particular policy chosen. For example, vectors of transfers can be scaled up or down without affecting the majority coalition. This indeterminacy can presumably be removed by incorporating the tax collection costs, or other operating costs, in the appropriate way.

be optimal for the center in terms of **ensuring** political support. This support would depend on individual utilities from the policy chosen.

In the discussion so far, we have assumed that intergovernment transfers are lump-sum, so that with quasilinear individual utilities, there is no stimulative effect on local public good consumption. Continuing with the quasilinear, separable case, we note that the center does have a way of stimulating lower level public good expenditure if it wishes. The reasons for wanting to do so could be, for example, spillovers across lower level jurisdictions that are neglected by those lower level governments. In this case, transfers may be in the form of matching grants, so that $R_i = a_i G_i$. A matching grant of this form reduces the marginal cost of local public good production, and therefore increases the equilibrium provision of local public goods.

We believe that the above model for analyzing both types of **intergovernment** grants can be extended to one with a more general preference structure, in which preferences over national and local public goods are not separable and utility is not linear in the private good. In that case, transfers between jurisdictions will have additional effects caused by substitution in household preferences that can either support or hinder federal government objectives. We take this up again after we have introduced influence activities into this framework.

Influence activities

When the federal government designs transfer schemes to provide incentives for lower levels of government, the possibility arises that sub-national authorities can engage in activities to try to influence the formulae themselves. This is the case, as noted in our discussion above, when the central government policy makers retain discretion over at least a portion of intergovernment transfers. Milgrom and Roberts' general formulation of influence activities within an organization can be applied **directly** to intergovernmental **transfers** in a federation. Discretion at the federal level can give rise to unproductive **redistributive** activities by lower levels of government that can reduce or offset

the gains from providing incentive schemes such as matching grant formulas. Suppose that the federal government can select either the amounts of intergovernmental transfers, R_l , or policy formula parameters, such as a_l . Because state or local government policymakers prefer receiving larger transfers from the central government so that they can provide higher levels of spending on state or local public goods, they will expend effort in general trying to change the federal policy. For example, we can extend the model to allow state fiscal authorities to expend effort e_l in jurisdiction l on activities that yield an increase in R_l . This can be costly, so also assume that the unit cost of producing the public good, c_l , rises with e_l , perhaps because influence activities take attention away from the management of the state government. Each local or state jurisdiction will balance the costs with the benefits of these redistributive efforts at the margin to decide how much they engage in lobbying or other types of influence activities.

To complete this framework, we need to explain how efforts of the sub-national public authorities influence the policy choices of the central government actors. A simple postulate is that the federal authorities can be successfully swayed because they receive some benefit. The returns to the public officials could be monetary, although such gains might be obtained more easily in a direct fashion". The benefit could also be in the form of political support of various kinds. If the center cares about the median voter in each jurisdiction, as well as at the national level, it may need to use state or other lower level governments in this fashion, to please voters appropriately.

An embellishment of the median voter model can yield some interesting insights as to how important influence activities might be even when we ignore the possibilities for personal gain for government officials. Suppose that there is substitution between national and state public goods in the preferences of the

⁵⁵However, authors such as Olson and others have noted the desire for opacity rather than transparency among those engaged in such activities. M. Govinda Rao also made this point to us in conversations about the functioning of Indian fiscal federalism.

voters in each jurisdiction and that the utility function defined over these two goods differs across jurisdictions. That is, voter preferences are given by

$$bU^i(G, g_i) + W(x_i),$$

where the distribution over the characteristic b can vary across the states. $U^i(G, g_i)$ differs in functional form across states in a way so that the median voter in each state desires a different mix between national and state public goods. In general, federal authorities can choose different policy packages consisting of national public goods spending and a set of transfers to the states (along the lines discussed earlier, when we introduced intergovernment transfers) that will meet the approval of a simple majority of the states' median voters. Different policy proposals that yield a parliamentary majority will necessarily attract a different collection of the states to the majority coalition.

We assume that federal authorities are self-interested, and either benefit from achieving a majority (which requires some more extensive modelling) or -from payments from local authorities (a simple addition). In this case, the federal government decision makers do not have incentives to make generous transfers to the states that do not contribute to the winning coalition of states. In fact, they only need to make transfers to the states that form the majority coalition. This implies that the median voter in each state will want the state fiscal authorities to do whatever they can, up to the limit of marginal costs equalling marginal benefits, to get into the majority. The median voter of a state that forms part of the parliamentary majority achieves a more desired national and local public goods plan. The stakes for the states in this type of model can be quite large when, as in the case of India, intergovernmental transfers provide for a large share of state public expenditures.

The result that emerges from this framework is that the costs of influence activities may outweigh the benefits of discretion in making transfers between the federal level and the states or across states through the federation. One solution is to remove such discretion by precommitting to amounts or formulas. This restraining of discretion might lose some of the possible benefits of such transfers if, for example, it requires imposing uniformity where variation might

be efficiency-enhancing. One way to precommit that is less restrictive is to have the decisions delegated to another body that would not be as susceptible to influence. This is precisely the potential role of the Finance Commissions in India. As we have argued in previous sections, this role has not been realized much in practice.

5. Conclusion

In this paper we have provided an overview and analysis of Indian fiscal federalism that stresses the interaction of political and economic factors in a particular institutional environment. We have outlined a model that may be used to more precisely examine some of these factors in shaping Indian fiscal federalism and its consequences for resource allocation. The particular contribution of the model is to propose a systematic framework for analyzing the interactions between the institutions of fiscal federalism and political decision-making that can allow strategic behavior on the part of self-interested government decision makers to be explored. The model incorporates constraints imposed by a democratic polity by using a median voter framework. Governments can still act in their self-interest because they capture some of the revenues obtained through taxes or intergovernment transfers. In the context of intergovernment transfers, we indicate, towards the end of section 4, how there can be a tradeoff between the cost of influence activities and the benefits of discretion in such a model. This helps to make more precise the kinds of issues raised in earlier sections of the paper. This model is only a beginning. Further research will be in formalizing the analysis in more detail, and in systematically comparing the predictions of our approach with India's continuing experience with fiscal federalism.

The presentation, in section 4, of our approach to modelling the political economy of fiscal federalism concludes with a discussion of the consequences of influence activities pursued between levels of government in a federation. In our case, these activities are motivated by the capacity of the federal

government to make interjurisdictional transfers. Our argument has two essential features: representative majority voting determines the fiscal policy of the federal government and federal fiscal authorities have some degree of discretion over public goods provision at the national level and transfers of federal revenues to the state or local governments. We argued at the outset that there is a significant degree of discretion at the federal level over both policy instruments plus the share of tax revenues that accrue to the federal government, despite appearances to the contrary. Our proposition is that the costs of discretionary policy making at the center of a fiscal federal system under representative majoritarian rule can be very large. The point that the central **government** will not have an incentive to make transfers to states **left** out of the majority-forming coalition **of** states relates to worries that the fiscal federalism as practiced in India may not promote national goals for equitable treatment of regions and social communities. Discretionary policy making and consequent influence activities in the majoritarian rule model can create significant losses to social welfare through the effects on allocative efficiency and on the distribution **of** public resources. This notion of the costs of influence activities within the organization of the fiscal policy apparatus augments other arguments that while discretion for policy makers is important for achieving allocative efficiency, it can come at the cost of encouraging **rent-seeking** activities.

We conclude with a general note on reforms in India, based on our overview in sections 2 and 3 of India's tax and expenditure systems in a federal perspective. There are several challenges to reforming India's federal structure of taxes and public expenditures. Coordination of tax systems among states and between the states and the central government is needed for improving allocative efficiency in the economy. However, tax reform will be difficult to negotiate because states have a constitutional right to levy sales taxes, allowing taxation of interstate trade. Base broadening **should be** a prominent goal of fiscal reform in India, although this too faces institutional impediments. For example, taxation of the service sector, the fastest growing part of the economy, is

within the province of the states, as is taxation of agriculture. Rationalization of indirect taxes and base-broadening of the overall tax structure are important and are receiving attention in policy-making. Our analysis and discussion suggest that institutional reform should also include the reduction of incentives for costly influence activities across levels of government.

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